DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
700 FEDERAL BUILDING
KANSAS CITY, MISSOURI 64106

REPLY TO
ATTENTION OF:

April 9, 1985

Superfund Branch
Engineering Division

Ms. Judi Schwarz
US Environmental Protection Agency
Region X
1200 Sixth Avenue
Seattle, Washington 98101

Dear Ms. Schwarz:

Enclosed are preliminary comments on the Western Processing Feasibility Study by both the Kansas City Superfund Design District and the Seattle District. Several of the comments express the desirability of more detailed comparisons of alternatives to arrive at a recommended solution. However, from a technical standpoint, the alternatives appear to be constructable with the possible exception of the onsite landfill.

We apologize that the comments have not been consolidated and typed in final form due to time restraints. We have asked Les Soule, Seattle District, to provide a clearer copy of their comments to you.

Should you need clarification on any comments or find conflicting comments, please contact Ms. Janet Wade of my staff at FTS 758-5332.

Sincerely,

Paul D. Barber
Chief, Engineering Division

Enclosure

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124

NPSEN-PL-CP

SUBJECT: Western Processing Feasibility Report, Phase II

Commander, North Pacific Division
ATTN: NPDEN-TE

1. Subject material was reviewed as to compliance with remedial action objectives and feasibility. Review was limited in scope due to time limits. Since the document did not present criteria for cleanup, a comparison of each alternative to EPA objectives and criteria was not possible. We have not commented on whether the action for Mill Creek (alternatives 5 and 7) requires a Section 404 Permit (reference pages 6-136, Volume I). We assume MRK will address this issue. All alternatives appear to be constructable; however, onsite landfill may not be possible due to State of Washington requirements.

2. Comments are as follows:

a. The institutional feasibility of the alternatives (or components of them) should have been determined as soon as possible. For example the soils at the site should be classified under the Washington Department of Ecology (WDOE) system to determine if onsite land disposal (or disposal in the State of Washington) is acceptable to the state. If the material is found to be "extremely hazardous" material under WDOE system, then any alternative (i.e., No. 3) which includes an onsite land disposal facility should be dropped from further consideration. Reguarding the alternative with an offsite RCRA landfill, will material be consolidated with other toxic materials from other sites in an established landfill or will land have to be acquired and a new site prepared?

b. The report (and the executive summary) should provide a matrix of alternatives and their compliance to EPA's objectives and criteria. (The summary tables of public health, environmental, and technical evaluation that were presented did not explictly compare each alternative to requisite criteria or program objectives.) Such comparison would allow the reviewer to suggest modifications to alternatives to best tailor them to the criteria. For example, if the criteria and objectives were better presented, an option for a variable depth excavation design might be developed which could better meet the criteria and be more cost effective.

c. The contention that "most of the ground water from beneath the site flows toward and discharges into Mill Creek," from as far as 60 feet below ground surface, needs to be better substantiated and discussed because of the importance of ground water flow patterns to ultimate contaminant dispersion. Also, the feasibility and/or depth of any proposed barrier cut-off wall would be influenced by ground water movement patterns. In addition, paragraph S-18

states that ground water is the primary means by which contaminants are transported to Mill Creek. Does the ground water which moves to the creek originate from rainwater percolating through the contaminated soil or is it from natural ground water flow from other sources? This would dictate how effective an asphalt cap is and if both cap and cutoff wall are required.

d. The source for the mound of ground water indicated beneath the site should be identified and discussed, as should the anticipated future configuration of ground water contours beneath the site.

e. The factors affecting successful dewatering, such as projected costs, pumping rates, soil permeabilities, types of wells, etc., need better definition before an alternative employing dewatering is selected. Also, schemes that use dewatering concepts must provide for treatment and disposal of contaminated ground water.

f. EPA should consider additional alternatives for Mill Creek. Two alternatives with one being no action, limits choice. The criteria for Mill Creek cleanup should be stated and a variety of methodologies explored. Perhaps a third phase, Mill Creek cleanup is in order.

g. Has the feasibility of permanently diverting Mill Creek from its present channel adjacent to Western Processing to a new location west of the area been totally explored? The text cited objection that relocation may uncover toxic materials offsite under other industrial areas. This does not outweight benefits obtained by relocation unless other toxic materials are a certainty.

h. The report states that it addresses the risk to the environment. For the water of Mill Creek, this assessment seems to be based on water hazards posed by the sediment. Criteria for definition of a problem sediment cleanup standards or remedial objectives for these materials was not presented. These should be included in the report.

i. Current definition for sediments does not and cannot rely solely on the bulk sediment chemistry. The presence and concentration of contaminants in sediments are not good indicators of potential biological availability and effects. As a result, assessments usually include direct biological testing of sediments and/or field measurements on biota/resource species (e.g., lab bioassays, field measurement of tissue bioaccumulation, infaunal community analysis, etc.). The decision criteria report that specified remedial objectives and standards for sediment from the Commencement Bay Nearshore/Tideflats Superfund Site (prepared by WDOE) provides a good example of a method for problem definition that uses both chemical and biological indicators.

j. Is there any conclusive evidence that the sediments are serving as a source of metals to the stream water? If the sediments are a sink, and are not leaching to the water column (perhaps due to the saturated environment and the preference for the particulate phase), an in-place cap may be a more cost effective means for addressing the sediment contamination. Without some

distinction between the possible sources of the stream water contamination (ground water, surface water, sediments), the proposed dredging will be difficult to evaluate.

k. Excavation schemes using dragline or clamshell below the ground water surface might be appropriate if mixing soil and water is permissible at this site.

l. Is there any resource use (e.g., sport fishery) at or downstream of the site? If so, do the edible tissues, or the key prey items, show bio-accumulation of contaminants? Has this route of exposure been explored? There is evidence that tissue levels of contaminants will reach higher levels in aquatic organisms when they are exposed directly to the sediments, and higher still when they feed on organisms living in the sediment, than when the exposure is entirely via the water. This suggests that water quality criteria may not be easily applied to the sediment phase.

m. Biological testing of the sediments should be made to determine if: they are a problem in place now; if resource use is present or possible, look for metal and organic contaminants in prey and/or edible species. The sediment should be tested in the lab to determine if the sediments are leaching metals to the water column and if so, at what rate and contribution to the observed problem.

n. If dredging is to be considered as a remedial alternative, the following solutions should be addressed:

(1) If the sediments are determined to be a problem in place, a variety of solutions should be considered:

(a) No Action. What is the erosional/accretion pattern of the stream? Will it cover or erode before remedial action can be taken?

(b) Source Control Only.

(c) Removal Only.

(d) Capping (Gravels and/or Cap) In Place.

(e) Source Control and Removal.

(2) What mechanical dredging system is proposed that can skim off 6 to 12 inches of sediment? Some hydraulic systems are capable of this with a high degree of control. The dragline system, with much lesser control, may also be able to roughly achieve this vertical precision. The clamshell and backhoe systems are not well equipped for this removal precision. (The report that evaluates different dredging, disposal, and treatment alternatives for the contaminated sediments from the Commencement Bay Nearshore/Tideflats Superfund Site (prepared by the Corps of Engineers, Seattle District) describes the characteristics, relative cost and precision attainable by

various dredging systems. Since this project involves a relatively small volume of dredged material (1,700 cubic yards), the report prepared by JRB for EPA and the U.S. Coast Guard on recovery of sinking chemicals from underwater also contains some useful technology review.)

(3) The cost estimate for the dredging seems high relative to other cleanup estimates we have seen. What mechanical system is the estimate based on?

(a) How much of the cost ($480K) of the dredging and disposal is associated with transport and disposal to a RCRA facility?

(b) What dewatering techniques/requirements are assumed? At what cost? Are the dredging equipment and the trucks to be watertight?

(c) Mobilization for dredges is usually a relatively fixed job cost, not a percentage of the operational costs. Mobilization/demobilization costs are primarily defined by the type of equipment employed. Given the small amount of dredged material, mobilization costs could be a major cost factor for this project.

(4) Page 6-151 (Volume I). Monitoring could be a useful and effective tool for the dredging operation. It is frequently a required feature. For example, the following issues could be addressed during monitoring:

(a) What will the actual dewatering rate be?

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(5) Page 6-44 (Volume I). Further testing prior to final cost estimates and selection of final alternatives is needed. Many saturated sediments will not fail RCRA testing even to the DW level. Recommend this be investigated before expensive disposal is proposed/used as a basis for decision. The decisionmaking framework for disposal for contaminated sediments from the Commencement Bay Nearshore/Tideflats Superfund Site (prepared by the Corps of Engineers, Waterways Experiment Station) provides a comprehensive overview of issues, tests, test interpretation, and recommended disposal requirements.

o. Page 5-14. Units of milligrams per liter are used in three places in the text and micrograms per liter in the accompaning figure.

p. On page S-41 under Example Alternative No. 1, Technical Aspects, the report says ground water under the site would require hundreds of years to return to acceptable levels by natural processes, assumed to be primarily by flushing from rainwater infiltration. In light of this, it seems useless to propose a ground water pumping and treating system for a mere 5 years as Example Alternative 4 proposes, or even 30 years as Example Alternative 2 proposes.

q. Assuming further remedy is required, the remedial measures should start with the most fundamentally simple (ie. capping) and be followed by an evaluation of effectiveness against the various criteria and objectives, and then, either modified to account for defciencies or abandoned as unworkable and a new alternative pursued. The feasibility report should be required to assess each alternative in this manner and developed to a recommendation.

KANSAS CITY DISTRICT, CORPS OF ENGINEERS
COMMENTS ON FEASIBILITY STUDY FOR SUBSURFACE CLEANUP, WESTERN PROCESSING, KENT, WASHINGTON, MARCH 6, 1985 and NPSEN 4 APRIL 1985

1. Feasibility Study:

a. A recommended remedial alternative by EPA and/or Washington State would be desirable. It would seem the lack of any apparent conclusions or recommendations by EPA regarding the remedial alternatives will prolong the decision making and start of remedial work on site.

b. The NPSEN comments indicate the State regulations may preclude an on-site landfill or even disposal of excavated soils anywhere in the State of Washington. This determination as indicated by NPSEN is essential to an evaluation of the remedial alternatives. With this as an unknown, remedial alternatives that minimize excavation appear desirable.

c. A modification of Alternate 4 (The PRP Proposal) is suggested for consideration and evaluation:

(1) Instead of excavation and removal of soil from Western Processing property, stabilize upper 2 feet ± with cement or flyash before paving.

(2) Instead of the Pumping/Flushing scheme with a well point system, install a withdrawal system only large enough to insure a constant inward gradient beneath and through the "diversion barrier."

(3) Assume withdrawal and treatment of ground water will continue indefinitely.

d. General comments on the remedial alternatives in the FS are:

(1) Alternative No. 2: See no need for "multimedia cap." Stabilization of upper soil with overlying pavement should be adequate and provide usable site.

(2) Alternative No. 3: Question feasibility or desirability of constructing landfill on-site.

(3) Alternative No. 4 (PRP Proposal):

(a) The 5-year pumping rate is based on assumptions and approximations. Desired reduction in contaminants may not be reached after 5 years.

(b) Long term performance of diversion barrier is an unknown. Continued pumping, i.e., withdrawal scheme could significantly prolong life of diversion barrier.

(c) Off-property contamination and clean-up should be considered as separate issue.

(4) Alternative No. 5: Three-hundred thousand cubic yards of excavation at cost of $180,000,000 presents the other extreme from doing nothing.

(5) Alternative No. 7: PRP report considered but rejected permanent diversion of Mill Creek. Suggest the cost be compared to the $1.3x10^6$ for Alternative No. 7.

2. NPSEN Comments:

a. Paragraph 2a: Agree regulatory questions regarding land-fill disposal need to be addressed ASAP. This would appear to be essential to finalizing the FS and issuing a Record of Decision.

b. Paragraph 2b: Agree that the criteria and objectives could be clarified but don't think the data is accurate enough to warrant "a variable depth excavation design" or cost analysis.

c. Paragraph 2e: Dewatering details can be addressed in design if nccessary.

d. Paragraphs 2g thru 2n: Concerns expressed over Mill Creek, dredging, etc., indicate cost of permanent relocation is worth-while presenting. However, the details on removal of the sediments if required can be addressed in design.

e. Paragraph 2q: Agree that FS should provide a recommended alternative and reasons for recommendation.

KARL D. WILLIG
Chief, Foundations & Materials Branch

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GEORGE W. PLOUDRE, P.E.
Asst. Chief, Engineering Division

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